CA Directory

Installation Guide

r12.0 SP6

Contact CA Technologies

Contact CA Support

For your convenience, CA Technologies provides one site where you can access the information you need for your Home Office, Small Business, and Enterprise CA Technologies products. At http://ca.com/support, you can access the following:

- Online and telephone contact information for technical assistance and customer services
- Information about user communities and forums
- Product and documentation downloads
- CA Support policies and guidelines
- Other helpful resources appropriate for your product

Provide Feedback

If you have comments or questions about CA Technologies product documentation, you can send a message to techpubs@ca.com.

If you would like to provide feedback about CA Technologies product documentation, complete our short customer survey, which is available on the CA Support website at http://ca.com/docs.

Character Limitations and Special Characters

CA Directory requires that the names of computers, users, directories, and so on, are valid for the operating system and also adhere to the following restrictions:

- **Installation Location for CA Directory ($DXHOME or %DXHOME%)**—The name of the location (folder or directory) that CA Directory is installed into must contain only alphabetic and numeric characters.
- **DXlink Password in the Knowledge File (ldap-dsa-password)**—If the password that you specify for *ldap-dsa-password* in the knowledge file contains a backslash (\), you must escape it with a second backslash (\\).

  For example, if the actual password is *p3.M\b@)*, you must include it in the knowledge file like this:

  ```
  ldap-dsa-password = "p3.M\\b@)"
  ```

- **Other Character Limitations**—CA Directory requires that the following items include only the standard ASCII characters that appear in English:
  - DSA names
  - Directory prefixes, for example, <c AU><o DEMOCORP>

Command Formatting Conventions

In this guide, commands are shown in a different font from the main text, as in this example:

```
get dynamic-group;
```

Variables that you must replace appear in italic text. In this example, replace *assoc-number* with the actual association number:

```
abort user assoc-number;
```

If you must enter only one of a list of options, the options are shown separated by the pipe character |. In this example, you should choose *either* true *or* false:

```
set access-controls = true | false;
```

Optional items are shown enclosed in square brackets, as the *tag* option is in this example:

```
set admin-user [tag] = own-entry
```

If items can be repeated, this is shown by a trailing ellipsis ..., for example:

```
item 1 [,item 2 ...]
```

File Location Convention

This document refers to the CA Directory installation location as DXHOME. For example, the location DXHOME/config/schema represents the following locations in a default installation:

- **Windows—**C:\Program Files\CA\Directory\dxserver**\config\schema**
- **UNIX—**/opt/CA/Directory/dxserver**/config/schema**

Format of Distinguished Names

The X.500 and LDAP communities differ in the way they write distinguished names (DNs):

- **X.500**—DNs are written from the top of the tree down, for example:

  ```
  <c US><o Acme><ou Staff><cn "John Citizen">
  ```

- **LDAP**—DNs are written from the leaf entry up, for example:

  ```
  cn=John Citizen, ou=Staff, o=Acme, c=US
  ```

If a portion of prefix is more than one word, you can enclose the whole prefix in quotes or just the problem portion. For example, both of these prefixes will work:

```
o="democorp test",c=au
"o=democorp test,c=au"
```

Note: Use a pair of quotes ("") for a null DN.

Contents

Chapter 5: Troubleshooting 35

Chapter 1: Components of CA Directory

This section contains the following topics:

Fundamental Changes from r8.1

Current CA Directory versions are fundamentally different from r8.1. Before you upgrade CA Directory from r8.1, you should be aware of the following:

- In r8.1, CA Directory used an Ingres database to store data. CA Directory now uses a memory-mapped file ("datastore") to provide persistent storage.

  Apart from increasing performance, consider the following installation consequences:

  - Some of the DXtools commands from the previous release no longer exist and others have changed, so you may need to modify script files.
  - You can no longer use cache-only DSAs. The installation process will not continue if it detects a cache-only DSA.

- In r8.1, one database can be used by many DSAs. However, now each datastore has only one DSA. A DSA can multi-thread requests to its datastore.

  If you have more than one DSA using a database, you need to remove all these DSAs except one before upgrading. If there is more than one DSA associated with one database, the installer produces an error message and exits.

Note: For more information about these changes, see the *Release Summary*.

Installation Components

Each CA Directory package contains several components. You can install, upgrade, or uninstall each package separately from the others. The packages and their components are as follows:

- Directory Package
  - DXserver

    DXserver is the central component of CA Directory. Each DSA uses a DXserver process. You can run many DSAs on one computer, but you need to install DXserver only once on each computer.
  - Documentation

    The documentation is delivered in HTML.
  - Directory Samples

    The samples contain different DSA configurations and show different methods of populating a directory. You can use these samples to explore the CA Directory features before setting up your own directory. The files for the sample DSA are always installed when you install this package, but you need to run a script to set them up.
- Directory Management Package
  - DXmanager

    DXmanager is a web application that lets you monitor, configure, and control DSAs. Using Tomcat, you can give DXmanager users permission to monitor DSAs, to start and stop DSAs, or to change the directory configuration.
  - JXweb

    JXweb is a web-based LDAP browser and editor. You can use JXweb to browse, search, configure, and update the directory data.
  - CA Directory Web Server

    DXmanager, JXweb, and the web samples require this web server.
  - Documentation

    This is the HTML version of the documentation. This includes information about administration, installation, integration with other products, and reference information.
  - Web Samples

    This component includes the DSML Server sample application. The DSML Server lets client applications use DSML, rather than LDAP, to communicate with CA Directory.

  The Directory Management components require JRE.

- JRE package

  This component contains the Java Runtime Environment, which is required by Directory Management and by JXplorer.

  If you connect to DXmanager from a computer that does not have JRE installed, the DXmanager client automatically tries to download JRE from the Sun website. To avoid this, install JRE on all computers that you use to connect to DXmanager.

- JXplorer package

  JXplorer is an open source, standards compliant, Java based, LDAP browser that lets you do the following:

  - Browse and edit any directory that supports LDAP or DSML
  - Load and unload LDIF files to and from a directory

  JXplorer requires JRE.

  Note: For more information, see the JXplorer web site at JXplorer.org.

Chapter 2: Preparing to Install CA Directory

This section contains the following topics:

How You Prepare for Installation

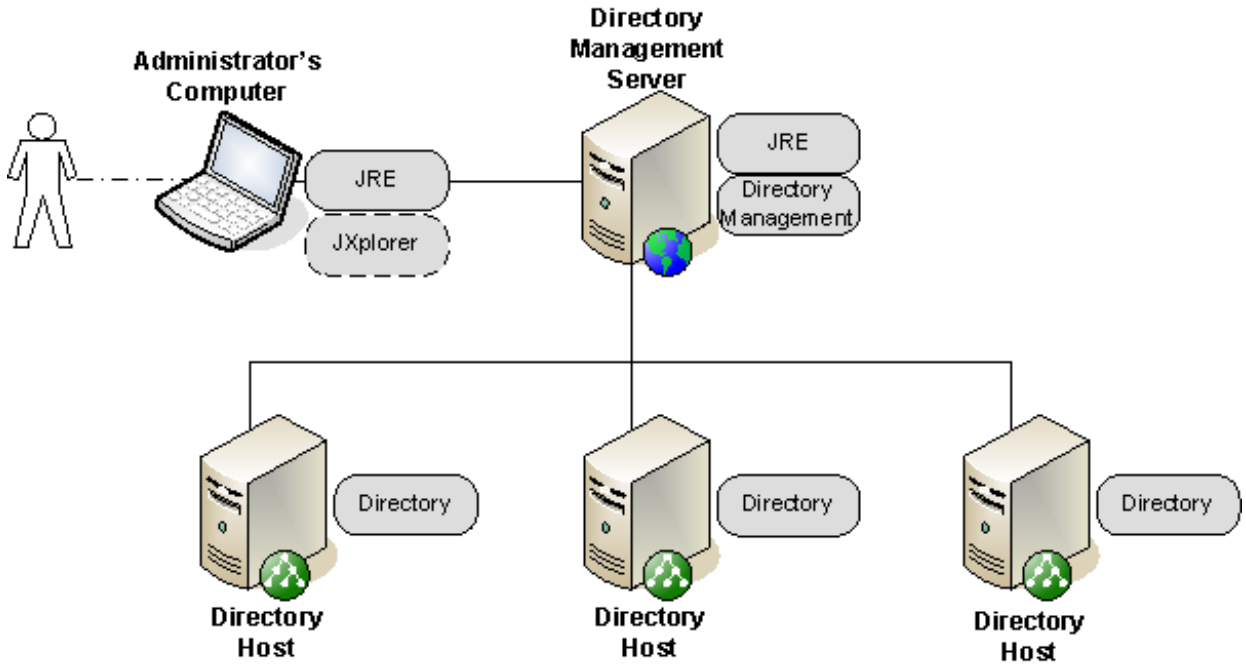
Before you start installing CA Directory, we recommend you do the following:

1. Check the Readme for system requirements.
2. Ensure that the computer has a CD-ROM drive, or that you can access a CD-ROM drive on the same network.
3. Log in as root (on UNIX) or as a user with administration permissions (on Windows).
4. Back up any existing data.
5. Back up the directory data, plus any schema files and configuration files that you have customized.
6. Review our recommendations on the computers you should use for your directory backbone, and determine which packages you want to install on each computer. (see page 14)
7. If you are upgrading from an earlier version of CA Directory, check and follow the recommendations in Fundamental Changes from r8.1 (see page 9).
8. Design the disk configuration (see page 17).
9. Choose an installation method (see page 18).

Note: For instructions about changing a CA Directory configuration to use DXmanager, see Modifying CA Directory Configuration To Use DXmanager in the *Administration Guide*.

What to Install on Each Computer

The following diagram shows the computers that we recommend you use for your directory backbone, and which packages you should install on each computer. The computers can have different operating systems installed.



The packages shown with dotted lines are optional.

Example: Implement a Large Directory Backbone

This example shows you how a company with a huge amount of data implements a large directory backbone.

Company A is a company with more than one hundred million customers. These customer details are stored in a directory that is distributed across fifteen sites in four regions.

To maintain this directory backbone, each region has regional administrators and each site has site administrators.

DXmanager is set up to allow the following levels of access to the directory:

- Regional Administrators can monitor, control, and configure the directory.
- Site Administrators can monitor the directory.

Computers Used by Company A for the Directory Backbone

Company A uses the following types of computers for its directory backbone:

Type of Computer	Number Required	Comments
Directory Hosts	15 (One for each site)	Directory data is replicated between the servers.
Directory Management Server	4 (One for each region)	Each administrator's computer connects to the local directory management server.
Authentication Server	4 (One for each region)	Each DXmanager connects to the local authentication server. User data is replicated between the servers.
Administrators' Computer	27	Each of four regions has three regional administrators. Fifteen site administrators are on call at any one time.

Example: Create a Test Installation, with Everything on One Computer

In this example, a systems administrator wants to see how CA Directory works. To do this, he wants to install all of the CA Directory components on one Windows computer.

The administrator should install the following packages on the test computer, in this order:

1. JRE package
2. JXplorer package
3. Directory package
4. Directory Management package

How the Recommended Computers Work Together

This following describes how the CA Directory components on each of these computers described previously work together.

- Administrators computer

  Each administrator and operator uses one of these computers to monitor and maintain the directory.

  Each administrator and operator connects to DXmanager and JXweb on the Directory Management server. Computers that have DXmanager and JXweb installed also need JRE installed.

- Directory Management server

  The *directory management server* is the computer on which you have installed the Directory Management package, which includes DXmanager.

  The administrator and operators connect to this computer to run DXmanager, JXweb, and the documentation, which are all included in the Directory Management package.

  The Directory Management components use Tomcat, which is an open-source web server. The Tomcat web server is installed as CA Directory Web Server. You must also install JRE on this computer, because DXmanager requires JRE.

  Note: Do not use this instance of Tomcat to host any other applications. It is customized to work with DXmanager only.

- Directory hosts

  A *host* is a single computer with CA Directory installed on it. A single host may serve one or more namespace partitions.

  You install the Directory package on each of these computers. You can also install JXplorer (which requires JRE).

How to Set Up the Recommended Computers

If you use the recommended computers, set them up in this order:

1. Set up the Directory Management server as follows:
   a. Install the JRE package.
   b. Install the Directory Management package.
   c. (Optional) If you plan to access DXmanager using a web browser on another computer, you must open one or both of the following TCP ports:
      - **Port 8080**—Allows unsecure access using HTTP
      - **Port 8443**—Allows secure access using HTTPS

2. Set up the directory hosts as follows:
   a. Install the Directory package.
   b. Allow access to TCP port 2123.

      This port is used for LDAP communication between DXadmind and DXmanager. You may need to manually set your firewall to open this port.
3. Set up the administrators' computers as follows:
   a. Install the JRE package.

      To access DXmanager, or JXplorer, you need to install JRE.
   b. (Optional) Install JXplorer.

Design the Disk Configuration

To improve recovery and performance, we recommend that you store the datastore on a separate physical disk from the product files. (By default it is stored under DXHOME/data/.)

Example: Disk Configuration on Windows

In the following example of a typical Windows installation, the C and D drives are on separate physical disks:

- **C disk drive**—CA Directory product files
- **D disk drive**—Directory information (datastore files)

Example: Disk Configuration on UNIX

In the following example of a typical UNIX installation, the /local partition is on a separate physical disk:

- **/opt/CA**—DXserver product files
- **/local/CA**—Directory information (datastore files)

Note: For more information about disk configurations such as mirrored disks and RAID, contact Technical Support at http://ca.com/support.

Installation Methods

You can install CA Directory in the following ways:

- Interactive installation

  On Windows, the Installation Wizard lets you install each package using the installation wizard (see page 21).

  On UNIX, an interactive installation script (see page 27) lets you install each package.

- Silent (unattended) installation (not recommended)

  Silent installation does not require any user input during the installation process. This means that the installation runs silently; no installation screens appear, no command prompt is required and feedback from the installation process does not appear on the screen.

  In an interactive installation, the user enters information during the installation process. By contrast, in a silent installation, the user's information is stored in a response file. A *response file* is a text file that supplies information to be used during the installation process. This input is normally supplied by the user during the installation process. When the installation program requires input, it checks the response file and uses the information in the response file.

  You can install the Directory and Directory Management packages using silent installation. You cannot install the other packages silently.

  During a silent installation, errors are written to a log file and the installation returns an error code. There is no other visual feedback about errors. In contrast, the interactive installation lets you deal with issues as they arise during installation. For example, if you are not logged in as a superuser, or do not have enough disk space, the interactive installation prompts you to rectify this before you can continue.

  Before you can install a package silently, you must create a response file for that package.

Chapter 3: Installing the Packages

This section contains the following topics:

Overview of the Installation Process

When you install the CA Directory package, the installation process determines if this is a new installation or an upgrade.

If the installation is a new installation, the installation process does the following:

1. Prompts you for the location where you want to install the software.
2. Prompts you for dxadmind details (trusted host and password).
3. Installs the software.

If the installation is an upgrade, the installation process:

1. Prompts you to make a system backup and the location of the backup.
2. Backs up the configuration.

   Note: The installation process does not back up any configuration held in XML files.
3. Backs up the data.

   Note: Depending on the previous version that is installed, this backup is from databases or datastores.
4. Advises you of the backup locations.
5. Removes the old version of software and installs the new version.
6. Restores the configuration and data.

Installation Logging

All installations are logged.

During installation, the following happens:

- The installation log is created in the temporary directory (/tmp on UNIX and %TEMP% on Windows.
- The file is copied to the ./DXHOME location when the installation or upgrade has completed successfully.
- The installation log is left in the temporary directory if the DXHOME environment variable is not defined or the installation does not complete successfully.

Installing on Windows

The following sections describe how to install CA Directory and CA Directory Management on Windows.

Default Installation Locations on Windows

The following tables list the default locations for the modules in CA Directory on Windows. The default DXHOME location is C:\Program Files\CA\Directory\dxserver.

To customize these locations during installation, run a custom installation or use the *dxsetup* command.

Directory Component	Default Location
DXserver	DXHOME
DXtools	DXHOME\bin
Sample DSAs and Tools	DXHOME\samples
Documentation	DXHOME\..\documentation

Web Component	Default Location
DXwebserver	DXHOME\..\dxwebserver
DXmanager	DXHOME\..\dxwebserver\webapps\dxmanager
JXweb	DXHOME\..\dxwebserver\webapps\jxweb
DSML Server	DXHOME\..\dxwebserver\samples\dsml
Sample Web Applications	DXHOME\..\dxwebserver\samples

Supporting Product	Default Location
Java Runtime Environment	C:\Program Files\Java*JRE-version* where *JRE-version* is the JRE version number.
JXplorer	C:\Program Files\JXplorer

Install CA Directory or CA Directory Management Interactively

On Windows, use the installation wizard to install CA Directory or CA Directory Management interactively.

To install Directory or Directory Management interactively

1. Log in as a user with Administrator privileges.
2. Insert the CA Directory or CA Directory Management CD into your optical disk drive.

   The installation wizard starts automatically.

   If the wizard does not start:

   - To install the Directory package, navigate to the \windows\dxserver\windows directory on the CD drive and run dxsetup.exe
   - To install the Directory Management package, navigate to the \windows\webcomponents\windows directory on the CD drive and run dxwebsetup.exe
3. When prompted to choose an installation type, we recommend that you choose a custom installation.
4. When prompted, supply the requested information for CA Directory or CA Directory Management as required.

   The Installation program installs CA Directory or CA Directory Management as requested.

More information:

Directory Package Installation Options (see page 22)
Directory Management Package Installation Options (see page 23)

Directory Package Installation Options

If you choose to install Directory interactively, you can choose between running a typical and a custom installation, as follows:

- **Typical installation**—The installation process installs all components and the default values are used.
- **Custom installation**—You can select which components to install, and can change the values of the items listed in the table.

We recommend that you choose a custom installation, using the values in the following table:

Directory Information	Recommendation	Comments and Description
License Agreement	Read, and accept it if you agree.	On UNIX systems, you need to show you have read the license, before you accept.
Setup Type	*Custom*	A custom installation lets you choose which components to install.
Installation Location	Accept the default.	
Program Features	Accept the default, which installs these components: ■ *DXserver* ■ *Documentation*	If you do not install a component and you later find that you need it, run this installation wizard again and add that component. The rest of the Directory installation will be unaffected.
DXmanager Hostname	If you do not have a specific host, enter the local host machine. If you do not use DXmanager, this is not used.	This is the computer that contains the DXmanager installation that you trust. You can change this when you install DXmanager.
Port	Accept the default *(2123*). Use the same port on every Directory package host. If you do not use DXmanager, this is not used.	This port is used for LDAP communication between DXadmind and DXmanager. You need to enter this port number when you set up a backbone in DXmanager. You can change this when you install DXmanager.
Password	Enter a password Use the same password on every Directory package host. If you do not use DXmanager, this is not used.	This is the password that DXmanager uses to communicate to DXadmind. You need to enter this password when you set up a backbone in DXmanager.

Directory Management Package Installation Options

The Directory Management installation script lets you choose the following types of installations:

- **Complete installation**—The installation process installs all components and the default values are used.
- **Custom installation**—You can select which components to install, and can change the values of the items listed in the following table.

We recommend that you choose a custom installation, using the values in the following table:

Directory Management Information	Recommendation	Description
License Agreement	Read, and accept it if you agree.	
Setup Type	*Custom*	A custom installation lets you choose which components to install.
Installation Location	Accept the default.	
Program Features	Accept the default, which installs all components: ■ *JXweb* ■ *DXmanager*	If you do not install a component and you later find that you need it, run this installation wizard again and add that component. The rest of the Directory Management installation is unaffected. When you install any component, the installation also installs *CA Directory Web Server* and the documentation.
DXwebserver Port Numbers	Accept the defaults, unless one is already in use on this computer: ■ Secure port: *8443* ■ Shutdown port: *8005* ■ Connect port: *8080*	
DXmanager Superuser Details	Enter the name and password of the DXmanager superuser.	This user is created in Tomcat. Later, you can sign into DXmanager using these details, and receive superuser permissions.

Create a Response File on Windows for a Silent Installation

You can create a response file on a computer that does not have any version of CA Directory installed. You create a response file for installing CA Directory silently.

To create a response file on Windows

1. Follow the instructions for installing CA Directory or CA Directory Management interactively.
2. On the Review Settings dialog of the installation wizard, click Create Response File.

   The Change Current Destination Folder dialog appears.
3. Select the folder where you want to save the response file, then click OK.
4. (Optional) Continue the installation on this computer by clicking Next, Install.

Use a Response File to Install the Directory Package Silently on Windows

You can use a response file to install the Directory package silently.

To use a response file to install the Directory package silently

1. Open a Command Prompt window.
2. Navigate to the following folder:

   `CDROM\dxserver\windows\`
3. Enter the following command:

   `dxsetup RESPONSE_FILE=`*`fileSpec`* `ETRDIR_DXADMIND_PASSWORD=`*`password`*

   RESPONSE_FILE=*fileSpec*

   Specifies the response file, including the path name. If the file specification includes spaces, then enclose it in quotation marks.

   ETRDIR_DXADMIND_PASSWORD=*password*

   Sets the DXadmind user password. This is used for communication between DXmanager and DXadmind.

Example: Installing the Directory Package

The following example installs the components based on the response file in C:\cadir.rsp:

```
dxsetup RESPONSE_FILE=C:\cadir.rsp ETRDIR_DXADMIND_PASSWORD=dxadmind
```

Use a Response File to Install the Directory Management Package Silently on Windows

You can use a response file to install the Directory Management package silently.

To use a response file to install the Directory Management package silently

1. Open a Command Prompt window.
2. Navigate to the following folder

   `CD-ROM\webcomponents\windows`
3. Enter the following command:

   `dxwebsetup RESPONSE_FILE=`*`fileSpec`* `DXMANAGER_PASSWORD=`*`password`*

   RESPONSE_FILE=*fileSpec*

   Specifies the response file, including the path name. If the file specification includes spaces, then enclose it in quotation marks.

   DXMANAGER_PASSWORD=*password*

   Defines the password of the DXmanager superuser you defined in the response file.

Upgrade CA Directory

This procedure covers the case where you have an older release of CA Directory running on a Windows computer, and you want to upgrade it to the latest version.

Note: Before you start, ensure each DSA in your system has only one database.

To upgrade Directory

1. Log in as a user with Administrator privileges.
2. Insert the CA Directory installation CD.

   The installation wizard starts.

   Note: If the wizard does not start automatically, navigate to the CD drive and run DXSetup.exe.
3. When prompted, specify the location of the backup.
4. Click Migrate.

   The upgrade process backs up your data in the location you specified.
5. When prompted to choose an installation type, we recommend that you choose a custom installation.
6. When prompted, supply the requested information as required.

   The installation process completes the upgrade and creates a backup as requested.

7. When prompted, confirm that you want to restore your configuration and databases.

   The installation process restores the data that the installation process backed up in step 4.

   The message Restoration is complete appears.

8. Click OK and exit the installation wizard.

   The installation process completes and installs the product on your computer.

More information:

Directory Package Installation Options (see page 22)
Create a Response File on Windows for a Silent Installation (see page 24)

How to Estimate the Time to Upgrade a DSA From r8.1

To estimate the time you need to do the upgrade, add the time it takes to complete each of the following tasks:

- Data dump to an LDIF file

  The installation process does this. Allow about five minutes per million entries.

- Software installation

  This takes less than half an hour.

- Data load from the LDIF file

  The installation process does this. Allow between one and five minutes per million entries.

Note: The times to dump and load vary, depending on your hardware configuration.

Installing on UNIX

The following sections describe how to install CA Directory on UNIX.

Default Installation Locations on UNIX

The following tables list the default locations for the modules in CA Directory on UNIX.

The default DXHOME location is /opt/CA/Directory/dxserver.

To customize these locations during installation, run a custom installation or use the *dxsetup* command.

Directory Component	Default Location
DXserver	DXHOME
DXtools	DXHOME/bin
Sample DSAs and Tools	DXHOME/samples
Documentation	DXHOME/../documentation

Web Component	Default Location
DXwebserver	DXHOME/../dxwebserver
DXmanager	DXHOME/../dxwebserver/webapps/dxmanager
JXweb	DXHOME/../dxwebserver/webapps/jxweb
DSML Server	DXHOME/../dxwebserver/webapps/dsml
Sample Web Applications	DXHOME/../dxwebserver/samples

Install CA Directory Interactively on UNIX from CD

The installation script lets you install any of the CA Directory packages interactively from their respective CD. You can also install CA Directory from a downloaded package (see page 28) for your operating system.

To install interactively on UNIX

1. Log in as *root*.
2. Insert the CA Directory or CA Directory Management CD into your optical disk drive and mount the drive.
3. Enter the following command:

   ```
   ./dxinstall.sh
   ```

   If you are installing the Directory package, the script identifies the OS you are installing on and starts the appropriate installation script.

If you are installing the Directory Management package, the following options appear:

```
                CA Directory Management Installation
              Copyright 2008 CA. All rights reserved.

---- OPTIONS ------------------------------------------------------------
  1. Install Directory Management package (DXmanager, JXweb)
---- Supporting Products ------------------------------------------------
  2. Install JRE
  3. EXIT
-------------------------------------------------------------------------
  Please select an option [1]
```

Enter a number to select one of the packages.

The installation script begins.

4. When prompted, supply the requested information for the package you are installing:
   - Directory (see page 22)
   - Directory Management (see page 23)

Install the Directory Package Using a Script on UNIX

If you do not have the CA Directory CD, you can install a downloaded Directory package using the *dxsetup* script.

Note: To install the Directory Management package, follow the procedure for installing from a CD.

To install the Directory package using a script

1. Log in as *root*.
2. Change to the following directory where you have your package:

   `/pkg_path/dxserver/install`
3. Enter the following command:

   `./dxsetup.sh [-nodocs] [-r source_directory]`

   -nodocs

   Installs the Directory package without installing the user documentation.

   -r *source_directory*

   Runs *dxsetup* from a location other than the current directory.

Create a Response File on UNIX

To create a response file for installing silently, do one of the following:

- Create a Response File to Install the Directory Package (see page 29)
- Create a Response File to Install the Directory Management Package (see page 29)

Create a Response File to Install the Directory Package on UNIX

To create a response file that you can use to install the Directory package you can use the ./dxsetup.sh script. Enter the following command:

```
./dxsetup.sh [-nodocs][-r source_directory] -write_responses filename

[-dxuser [username] -dxadmindpass [password]] -default
```

-nodocs

Installs the Directory package without installing the user documentation.

-r *source_directory*

Runs *dxsetup* from a location other than the current directory.

-write_responses *filename*

Creates a response file at the specified location.

Note: The default directory for dxsetup.sh is dxserver/install/.

To create a response file that you can use to install the Directory Management package, you can use the dxwebsetup.sh script. Enter the following command:

./dxwebsetup.sh [-r source_directory] -write_responses filename

-r source-directory

Specifies a directory to run dxwebsetup from. The default is the current directory.

-write_responses /filename

Creates a response file at the specified location.

Use a Response File to Install the Directory Package Silently on UNIX

To install the Directory package silently using a response file, you can use the dxsetup script, specifying the response file as a parameter. Enter the following command:

```
./dxsetup.sh -silent -responsefile filename
```

-silent

Installs the package with no user interaction, using the defaults in the response file. If the standard response file is used, the installation process still prompts you to accept the EULA. If a previously generated response file is used, this means the user has previously accepted the EULA and no user interaction is required.

-responsefile *filename*

Specifies the name of the response file used to install the package. The installation uses the options listed in the specified response file.

Note: If the *dsa* users did not previously exist, this installation creates them without passwords. You should assign passwords to these users.

Use a Response File to Install the Directory Management Package Silently on UNIX

To install the Directory Management package silently using a response file, you can use the dxwebsetup script, specifying the response file as a parameter. Enter the following command:

```
./dxwebsetup.sh -silent -responsefile filename
```

-silent

Installs the package with no user interaction, using the defaults in the response file. If the standard response file is used, the installation process still prompts you to accept the EULA. If a previously generated response file is used, this means the user has previously accepted the EULA and no user interaction is required.

-responsefile *filename*

Specifies the name of the response file used to install the package. The installation uses the options listed in the specified response file.

Create a DSA Datastore and Populate It from an LDIF File

After you have installed the DSA software, you can create a DSA datastore and then populate the datastore from the LDIF file. You can use the command dxloaddb estimate the size of datastore you need to handle your LDIF file.

To create a DSA datastore and populate it from an LDIF file

1. Enter the following command:

   ```
   dxloaddb -n -s myDSAname myLDIFfilename
   ```

   -n

   Specifies that DXloaddb does not do any actions.

   -s

   Specifies that DXloaddb produces the following statistics concerning the datastore:

   - Total data size in MB
   - Total number of entries
   - Number of entries ignored
   - Amount of padding in the datastore file in KB
   - Average number of entries per MB

   myDSAname

   Defines the DSA whose datastore is to be loaded.

   myLDIFfilename

   Specifies the name of the LDIF file to load into the datastore.

   The command displays the number of entries and size per entry you can use to estimate the size of the datastore you will need to handle you LDIF.

2. Enter the following command:

   ```
   dxnewdsa myDSAname 1234
   ```

   myDSAname

   Defines the name of the DSA. Maximum length is 31 characters.

   Port

   Specifies the port number of the DSA.

   The command creates the datastore.

   Example: The following command creates a 1 GB datastore:

   ```
   dxnewdsa myDSAname 1234
   ```

3. Enter the following command:

   ```
   dxloaddb myDSAname myLDIFfilename
   ```

   myDSAname

   Defines the DSA whose datastore is to be loaded.

   myLDIFfilename

   Specifies

   The command populates the datastore.

Note: For more information, see the *Reference Guide* for details of the dxloaddb and dxnewdsa commands.

Activate a 64-bit DXserver

CA Directory includes a 64-bit DXserver for those UNIX platforms that support it.

On platforms that can run both 32-bit and 64-bit DXserver, the binaries dxserver, dxloaddb and dxdumpdb are symbolic links pointing to either *BinaryFileName*32 or *BinaryFileName*64. This procedure describes how you activate a 64-bit DXserver on these platforms by linking to the 64-bit binaries, instead of the 32-bit binaries that are used by default.

Important! On platforms that can only run 32-bit or 64-bit, the binaries listed are not symbolic links, and you should not follow this procedure.

To activate a 64-bit DXserver, enter the following commands:

```
cd $DXHOME/bin
```

```
rm BinaryFileName
```

```
ln -s BinaryFileName64 BinaryFileName
```

Chapter 4: Uninstalling

This section contains the following topics:

Uninstall Directory Packages on Windows

On Windows, you can use the Installation Wizard to uninstall CA Directory packages. Each package has a separate wizard. The uninstall process will not remove the data files.

Note: You can also use uninstall each CA Directory package by using Windows Control Panel, Add/remove programs.

To uninstall Directory packages

1. Log in as a user with Administrator privileges.
2. Insert the CA Directory installation CD.

   The Add and Remove Components dialog of the Installation Wizard starts.

   Note: If the Installation Wizard does not start, navigate to the CD drive and run the dxsetup.exe or dxwebsetup.exe file to uninstall CA Directory or CA Directory Management respectively.
3. Select remove, and then click Next.
4. Click Uninstall.
5. When prompted confirm whether you want to make a backup of your tailored schema and configuration files.

   The uninstall process removes the CA Directory or CA Directory Management package as requested.

Uninstall Directory Packages Using the Script dxuninst.sh on UNIX

On UNIX, the script dxuninst.sh lets you remove CA Directory packages.

The script dxuninst.sh does not remove any of the supporting products, including JXplorer and JRE.

When the uninstall process backs up the data files, it removes the original files.

To uninstall using the script dxuninst.sh

1. Log in as *root*.
2. Enter the following command from DXHOME/uninstall:

   ```
   ./dxuninst.sh
   ```

   The script displays the installed CA Directory packages.
3. Enter the package number of the package you want to uninstall.

   The uninstallation script for the selected package begins.
4. When prompted, enter the path to store a backup of the data files.

dxuninst Command

The uninstallation script has the following format:

```
./dxuninst.sh [-dxuser non-dsa-user] [-silent]
```

-dxuser *non-dsa-user*

(Optional) Defines a directory administrator to remove during uninstallation.

The script assumes that the DXserver administrator user ID is *dsa*. If you created a different user ID during installation, you need to specify this user during the uninstallation. When the script runs, if it fails to find the default DXserver administrator, it prompts you to specify the user ID.

-silent

(Optional) Specifies that the uninstallation runs in silent mode (no user prompts or feedback).

Chapter 5: Troubleshooting

This chapter describes how to deal with problems that might occur during or after installing or upgrading CA Directory.

This section contains the following topics:

Troubleshooting on all platforms

This section describes how to deal with problems that might occur during or after installing or upgrading CA Directory.

Problem Resolving Hostname When Installing CA Directory

Valid on all platforms

Symptom:

When installing CA Directory, I get an error message saying it could not resolve the hostname.

Solution:

To fix this problem you can do one of the following:

- Specify the localhost as the hostname.

  Note: This does not work if you are using DXmanager
- Check your DNS configuration to ensure it allows for reverse lookups.

Troubleshooting on UNIX

This section describes how to deal with problems that might occur during or after installing or upgrading CA Directory.

DXadmind Times Out after Upgrading

Valid on UNIX

Symptom:

After I upgrade CA Directory, DXadmind times out when started.

Solution:

This problem occurs because DXadmind is already running.

In a standard upgrade for DXserver, the upgrade process stops and restarts DXadmind when the upgrade is complete. However, if you cancel the installation for DXserver during the process, DXadmind may not have stopped. As a result, it times out when it tries to restart.

To fix the problem, you need to stop and restart DXadmind.

To stop and restart DXadmind

1. Enter the following command:

   ```
   dxadmind status
   ```

   The status of Dxadmind appears.

2. Log in as the DXserver administrator.

   Note: You need to be logged in as the DXserver administrator to run the command dxadmind start.

   By default, the user name for the DXserver administrator is dsa.

3. Enter the following command:

   ```
   dxadmind stop
   ```

   DXadmind stops.

4. Enter the following command:

   ```
   dxadmind start
   ```

   DXadmind restarts.

5. If DXadmind times out again, do the following:

   a. Enter the following command:

      ```
      ps -ef | grep dxadmind
      ```

      The command finds the Dxadmind process and a response which includes a line similar to the following appears:

      ```
      dsa 6204 1 0 21:23:34 ? 0:00 dxadmind start
      ```

In this example, the process name is dxadmind, and the process number is 6204.

b. Enter *either* of the following commands:

```
pkill dxadmind
```

```
kill 6204
```

DXadmind ends.

c. Enter the following command:

```
dxadmind start all
```

DXadmind restarts.

Troubleshooting on Windows

This section describes how to deal with problems that might occur during or after installing or upgrading CA Directory.

Note: For descriptions of messages that can appear during installation, see Installation Error Messages on Windows in the *Reference Guide*.

Install Failed with 'Error starting 'dxadmind''

Valid on Windows 2008

Symptom:

My installation of Directory failed and I got the error message Error Starting 'dxadmind'.

Solution:

This occurs if IPv6 has been disabled, but the tunnel from IPv6 to IPv4 has not been disabled.

To fix this problem

1. Disable IPV6 and enable only IPV4.
    a. Go to Control Panel, Network and Sharing Center.
    b. Click the View status of the Connection.
    c. Click the Properties.
    d. Untick the Internet Protocol Version 6 (TCP/IPv6).
    e. Click OK.
    f. Repeat for all connections.
2. Disable the IPv6 to IPv4 tunnel.
    a. Open a Run prompt.
    b. Type the following then click OK:

        ```
        services.msc
        ```

    c. Find the IP Helper service and stop it.
3. Install Directory.

Cannot Connect to CA Directory from Remote Computer

Valid on Windows

Symptom:

I am not able to connect to CA Directory from another computer.

Solution:

This happens because the firewall is on by default.

Disable the firewall. This means all ports are open and you do not need to configure any port

If you do not want to disable the firewall completely, use one of the following solutions:

To allow access to all ports used by CA Directory

1. Open Control Panel.
2. Click Windows Firewall.

   The Windows Firewall dialog appears.
3. Click the Exceptions tab, and then click Add Program.

   The Add a Program dialog box appears.
4. Click Browse to locate dxserver.exe and then click OK.

   Windows adds the program to the list on the Exceptions tab.

   This opens all the ports that CA Directory uses.
5. Click OK.
6. On the Exceptions tab, select the check box next to dxserver.exe, and then click OK.

   If you later decide that you do not want the program to be an exception, clear this check box.

To open a single port

1. Open Control Panel.
2. Click Windows Firewall.

   The Windows Firewall dialog appears.
3. Click the Exceptions tab, then click Add Port.

   The Add a Port dialog box appears.
4. Complete the following fields in the Add a Port dialog box:

   Port Number

   Specifies the number of the port you want to open.

   Example: Port 2125 specifies DXadmind.

   Name

   Specifies the name of the port.

   Example: DXadmind.

   TCP

   Specifies a TCP port.

   The new service is added to the Exceptions list.

   Click OK.

To permit connections to a specific DSA only, add the port number for that specific DSA. For example, add port number 19389 for access to the Democorp DSA only.

Note: In this case, do not add dxserver.exe to the exception list.

Need to Diagnose a CA Directory Startup Problem

Valid on UNIX

Symptom:

I am having a problem with CA Directory startup that I need to diagnose.

Solution:

The /etc/init.d/dxserver script starts and stops CA Directory at system boot and shutdown. This starts and stops SSL daemons, DXadmind, and any DSAs marked for autostart.

The script writes a log called dxserver-rc.log, usually in the DXserver logs directory, DXHOME/logs (if DXHOME is not defined, then look for this file in the /tmp directory). This log shows each of the processes started or stopped.